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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,885	08/01/2001	Sterling Eduard McBride	SAR/14049	6195

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EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/925,885

Applicant(s)

MCBRIDE ET AL.

Examiner

Kevin S Wood

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 10, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 6-8, 11-14 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 914,914A,914B. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites the limitation "said microfluidic actuator" in the first line. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3-5, 9, 10, 15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,154,586 to MacDonald et al.

Referring to claim 1, MacDonald et al. discloses all the limitations of the claimed invention. MacDonald et al. discloses a fluidic optical switch, including: a fluid contained in a reservoir (32) having a characteristic; a first optical waveguide (16) having an end located proximate to the fluid; at least one second optical waveguide (21) having an end located proximate the fluid; and an actuator (34) coupled to the fluid for changing the characteristic of the fluid. See Fig. 1a and Fig. 1b, along with their respective portions of the specification.

Referring to claim 3, MacDonald et al. discloses all the limitations of the claimed invention. MacDonald et al. discloses a deformable interface (26) formed between the fluids. See the figures.

Referring to claim 4, MacDonald et al. discloses all the limitations of the claimed invention. MacDonald et al. discloses that there is a fluid/fluid interface (26). See the figures.

Referring to claim 5, MacDonald et al. discloses all the limitations of the claimed invention. MacDonald et al. discloses that the actuator (34) controls the movement and shape of the deformable interface (26). See Fig. 1a and Fig. 1b, along with their respective portions of the specification.

Referring to claim 9, MacDonald et al. discloses all the limitations of the claimed invention. MacDonald et al. discloses that the reservoir is tubular (32). See the figures.

Referring to claim 10, MacDonald et al. discloses all the limitations of the claimed method. MacDonald et al. discloses a fluidic optical switching method, including: supplying light through a first waveguide (16); altering a characteristic of the fluid (pressure); and directing, in response to the characteristic alteration, the light into a second waveguide (21). See Fig. 1a and Fig. 1b, along with their respective portions of the specification.

Referring to claim 15, MacDonald et al. discloses all the limitations of the claimed method. MacDonald et al. discloses that an actuator (34) is actuated to alter the characteristic. See Fig. 1a and Fig. 1b, along with their respective portions of the specification.

Referring to claim 17, MacDonald et al. discloses all the limitations of the claimed method. MacDonald et al. discloses the directing step further comprises directing the light into one of a plurality of waveguides (21,24). See Fig. 1a and Fig. 1b.

***Allowable Subject Matter***

6. Claims 6-8, 11-14, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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7. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 2, the prior art does not disclose that the actuator comprises an electrohydrodynamic actuator.

Referring to claim 6, the prior art does not disclose that the characteristic is a controllable refractive index gradient.

Referring to claim 7, the prior art does not disclose that the fluid comprises a controllable refractive index gradient region that is controlled by an electric signal.

Referring to claim 8, the prior art does not disclose that the fluid comprises a controllable refractive index gradient region that is controlled by an incident light.

Referring to claim 11, the prior art does not disclose that the characteristic is the position of a meniscus.

Referring to claims 12-14, the prior art does not disclose the characteristic is a refractive index gradient.

Referring to claim 16, the prior art does not disclose that the actuator is an electrohydrodynamic actuator.

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**Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,470,107 to Brockett et al.

This reference discloses an invention that is very similar to that of the claimed invention.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.



**Brian Healy**  
**Primary Examiner**

KSW  
April 2, 2003

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